of the terms scrofula, struma, and tubercle. After setting apart the *strumas*, as affecting special glandular structures, for another lecture, he proceeds to the lymphatic tumours, including therein all those formations which are generally supposed to result from a lymphatic dyscrasia. The products of leucæmia afford occasion for a continuation of the discussion of the question of priority between our distinguished author and Prof. Bennett, of Edinburgh. These products are hyperplastic in the glands in which they are found— the lymph-glands and the spleen, for instance—but they develop, as if by local infection, heteroplastic formations in parts where no lymph elements normally exist. The author's views upon leucæmia and leucocytosis are doubtless familiar to most of our readers, through his work on *Cellular Pathology*. The pathological manifestations of typhoid fever, as in the glands of Peyer and in the solitary follicles of the rectum, are then cursorily treated, as occupying a place midway between leucæmia and scrofulosis. The latter is then considered, and we shrink from conducting our readers into the much-disputed territory of scrofula and tubercle. Discussions which have waxed and waned for generations are appalling, and we bide the time when these perplexing questions shall be more definitely settled. At some future day we shall hope to follow the author through the third and closing volume. E. T. C.

ART. XXV.—*Fecundity, Fertility, Sterility, and Allied Topics.* By J. MATTHEWS DUNCAN, A. M., M. D., etc. 8vo. pp. 378. Edinburgh: A. & C. Black, 1866.

Researches in Obstetrics. By the same Author. 8vo. pp. 467. New York: Wm. Wood & Co., 1868.

THE work on Fecundity, Fertility, etc., by Dr. Duncan, of Edinburgh, is a most valuable and interesting one. So far as the researches of the author go in regard to the conditions of 16,953 legitimate births registered in Edinburgh and Glasgow, Scotland, the conclusions he has drawn from them appear to be fully sustained. But for their establishment, as positive physiological truths, it is necessary that their agreement should be tested with similar inquiries instituted in respect to the reproductive function in women among different peoples inhabiting different climates and different sections of country.

We believe that our best plan, as well to evince our high estimate of the value of Dr. D.'s labours in elucidation of the several important questions discussed by him, as to instruct our readers in respect to the conclusions to which his researches have led him, would be to present simply his general conclusions on each question discussed, and pretty much in his own words. We had concluded to pursue this course, but in proceeding to carry it out we found it would occupy more space than could with propriety be spared for its proper accomplishment, we have been obliged, in consequence, to confine it to the first four of the ten parts into which the volume before us is divided.

In the first part are discussed the variations in the fecundity and fertility of women according to age.

a. The actual fertility of the female population as a whole at different ages.

From the data examined by Dr. D. in elucidation of this inquiry, he concludes that, 1. The actual, not the relative, fertility of the Scotch female population chiefly made use of in the inquiry, as a whole, at different ages, increases from the commencement of the child-bearing period of life, until the age of thirty is reached, and then declines until its extinction together with the child-bearing faculty. 2. The actual fertility is much greater before the climax, thirty years, is reached, than after it is passed. 3. At least three-fifths of the population are recruited from women not exceeding thirty years of age.

b. The comparative fertility of the female population at different ages. In respect to this question, the conclusions of Dr. D. are:—

1. It increases gradually from the commencement of the child-bearing period of life until about the age of thirty years is reached, and then it still more

gradually declines. 2. It is greater in the decade of years following the climax —about thirty years of age—than in the decade of years preceding the climax.

c. The comparative fecundity of the whole wives in the population at different ages. From the data adduced the conclusions are: 1. The fecundity of the mass of wives in our population is greatest at the commencement of the child-bearing period of life, and after that period gradually *diminishes.* 2. The fecundity of the whole wives in our population included within the child-bearing period of life is, before thirty years of age is reached, more than twice as great as it is after that period.

d. The initial fecundity of women at different ages. On this point the conclusions of Dr. D. are as follows: 1. The initial fecundity of women gradually waxes to a climax, and then gradually wanes. 2. Initial fecundity is very high, from twenty to thirty years of age. 3. The climax of initial fecundity is probably about the age of twenty-five years.

e. As to the fecundity of women at different ages, the conclusions are: 1. Nearly all women married between twenty and twenty-five years of age are fecund. 2. The fecundity of very young wives (from fifteen to twenty years) is greater below twenty than that of such as married at from twenty-five to twenty-nine. 3. There is a climax of fecundity in women, which is reached between the ages of twenty and twenty-five years.

Dr. D.'s *second inquiry* is as to "the weight and length of the new-born child." His conclusions are drawn from the examination of 2070 pregnancies, with 2087 children, which occurred at the Edinburgh Royal Maternity Hospital. *a.* The influence of primogeniture on the weight of the newly-born child. *Conclusions* 1. The weight of children of primiparæ is far from being uniform; it varies according to the age of the mother. 2. The weight of the children of all mothers, whether primiparæ or multiparæ, varies also according to law of the mother's age. 3. By a table given of the mean weights of the children of first and subsequent pregnancies it is shown that no increase or decrease occurs according to the number of the pregnancy, after the first, the children of which are no doubt, as a rule, the lightest. *b.* The variation of the weight of new-born children according to the age of the mothers. By a table given it is shown that the weight of the child gradually increases to its climax with the age of the mother, from twenty-five to twenty-nine years. After this age the weight of the child very slowly declines. This slowness is entirely out of proportion with the rapid diminution of fecundity of women of similar ages. *c.* The influence of primogeniture on the length of the newly-born children. The same general conclusions in respect to the weight of children of primiparæ and multiparæ may be repeated in respect to the length of newly-born infants. *d.* In regard to the variation in the length of the newly-born child according to the age of the mother, Dr. D. remarks, that a careful study of the weights and lengths of newly-born mature children lends some support to the doctrine that the vigour of the female reproductive system waxes to the age of about twenty-five years and from that period wanes.

The *third part* of Dr. D.'s treatise presents some remarks on the production of twins.

a. The number of twins born of women of different ages. According to Dr. D. the mean age of 16,301 mothers of legitimate children in Edinburgh and Glasgow, in 1855, was above twenty-nine years. The mean age of 198 wives bearing twins was thirty-one years. The twin bearer is thus older than the general run of bearers. In the same population the number of twins born by women under thirty years of age was 86; the number born by women above thirty years was 112; showing a majority of 26 on the side of the elder women. Or, while of all births among these 16,301 wives three-fifths occurred among women under thirty years of age, there occurred only two-fifths of the twins among these younger women.

b. Influence of age on woman's fertility in twins. From somewhat imperfect data it is inferred that when woman generally is most fecund she is least likely to produce twins. Between the ages of twenty and thirty years fewest wives have twins. Before and after that period of high general fecundity the special productiveness in twins increases.

c. Initial fertility in twins at different ages. By a comparison between two sets of fertile women, the one bearing single children, the other bearing twins, the law as to the increase of twins as fertile women grow older is deduced. A regular increase is shown to take place until the age of forty years is reached. Every 153d woman among the youngest fertile women bears twins within two years after marriage; among the older women, from thirty-five to forty years of age, every 42d woman bears twins within two years after marriage, or nearly four times as many.

d. Relation of the frequency of twins to the number of the mother's pregnancy. From the statistics examined by him Dr. D. concludes that: 1. The actual number of twins born in different pregnancies decreases as the number of the pregnancy increases. 2. The comparative number of twins born in different pregnancies increases as the number of the pregnancy increases. 3. The increase of the comparative number of twins with the number of the pregnancy does not appear to hold good with the first pregnancy as compared with the three immediately subsequent pregnancies; women in their first pregnancies being more likely to bear twins than in those immediately subsequent.

e. In respect to the size of families in which twins occur, Dr. D. presents a table which shows that the average size of families of women married the same number of years is greater in the twin bearing than in ordinary families, counting down to the birth of the twins.

The following is a *résumé* of the conclusions which the author has attempted to demonstrate in reference to the question of twins:—

"1. The largest number of twins is produced by women of from twenty-five to twenty-nine years of age, and on each side of this climax of fertility in twins there is a gradually increasing falling off in the number as age diminishes on the one side and increases on the other.

"2. Twins are not regularly distributed among births generally, their production, therefore, is not subjected to the same laws which govern ordinary fertility.

"3. The mean age of twin-bearing mothers is greater than that of mothers generally.

"4. Twins increase in frequency as mothers become older. This forms a striking contrast to the fecundity of a mass of wives (not mothers), which diminishes as their age increases. It accords, however, with the law of intensity of fertility of fertile women.

"5. Newly-married women are more likely to have twins the older they are.

"6. While the fecundity of the average individual increases with age till twenty-five is reached, and then gradually diminishes, there is some probability that the opposite is true, so far as regards twins alone; fertility in twins being greatest when fecundity is least, and *vice versa.*

"7. The actual number of twins born of a mass of women in different pregnancies decreases as the number of the pregnancy increases.

"8. The number of twins relatively to the number of children born in different pregnancies increases with the number of the pregnancy. In other words, a woman is more likely to have twins in each succeeding pregnancy than in the former pregnancy. The first pregnancy forms an exception to this rule.

"9. In an individual, twin bearing is a sign of high fertility at the time. It also in a mass of women shows a high amount of fertility, at least till the time of the birth of the twins.

"10. It is probable, though not proved, that twin-bearing women have larger families than women uniformly uniparous."

The subject of the fourth part of the treatise under consideration is the laws of the fertility of women. *a.* Of the fertility of the whole marriages in a population. From somewhat imperfect data Dr. D. draws the following conclusion, of value only in proportion to the value of the data upon which it is based; namely, the average duration of fertility in married women, including those who do not bear children, is about seven and a half years. *b.* Of the fertility of the whole fertile marriages in a population at a given time. *c.* On the annual fertility of the married women of child-bearing age. *d.* On the size of the families in a population at a given time. *e.* On the fertility of the whole of the marriages in a population that are fertile at a given time. *f.* On the fertility of fertile marriages lasting during the whole child-bearing period of life. *g.* On the fertility of persistently fertile marriages lasting during the same period. *h.* On the fertility of persistently fertile wives at different years of married life. *i.* On the fertility of fertile wives at different periods of married life. *j.* On the degrees of fertility of wives, mothers of families of different numbers.

Although much of interest will be met with in the chapters devoted to the consideration of the first nine of the questions just mentioned, yet no general conclusions have been attempted by Dr. D. in respect to either, in consequence of the inefficiency and fewness of the data he was enabled to collect for their elucidation.

In respect to the 10th question stated above, Dr. D. gives as the first conclusions deducible from the data given by him : 1. The mass of early or first children, up to the third or fourth, come into the world in more quick succession than those that immediately follow; 2. A mass of children, numbering from the fourth or fifth on to the tenth, succeed one another more slowly than those of the first category, and of the third; 3. A mass of children, following the tenth, come into the world hurrying after one another with a gradually increasing rapidity, which excels that of all their predecessors; a circumstance which may, in part at least, account for the great mortality of women bearing children after the ninth.

It seems to Dr. D. that the first of these three conclusions can be explained only by supposing what may therefore be held as equally well demonstrated: 1. That wives bearing their early children, up to the third or fourth, breed more rapidly than they subsequently do; 2. That wives produce their children, numbering from the third or fourth on to the tenth, at greater intervals than their earlier progeny; 3. That wives bearing more than ten children, or wives bearing very large families, breed more rapidly than others during their whole childbearing lives.

There are several other interesting questions bearing upon the general theme of the laws of the fertility of women, which we shall pass over without notice.

We regret that the space to which we are necessarily limited will oblige us to close with only a single quotation from one of the six remaining parts which complete the volume before us. Like the first four parts, the subjects discussed in the latter are of deep importance, not merely in their bearing upon obstetrical science, but also to that department of political economy which treats of population and to the principles of life insurance. To appreciate fully the value of Dr. D.'s labours in the elucidation of the several topics discussed by him demands a careful study of the work itself.

The quotation with which we shall close the present notice is from that portion of the work which treats of the duration of pregnancy. They are the general conclusions of the author on the subject.

"1. The interval between conception and parturition (the real duration of pregnancy) has not been exactly ascertained in any case; 2. The average interval between insemination and parturition (commonly called the duration of pregnancy) is 275 days; 3. The average interval between the end of menstruation and parturition is 278 days; 4. The intervals between insemination and parturition and between menstruation and parturition have no standard length, but vary within certain limits; 5. While absolute proof of the prolongation of real pregnancy beyond its usual limits is still deficient, yet there is evidence to establish the probability that it may be protracted beyond such limits to the extent of three or four weeks, or even longer."

The essays composing Dr. Duncan's volume of *Researches*, the title of which is given at the head of this article, we are told by the author in his preface, are chiefly selected from his contributions to various medical and scientific periodicals, all, however, carefully revised, while to many of them have been made large and important additions. A few of the essays make their first appearance in the volume before us. The entire series are deeply interesting—most of them are of great practical value. The first part comprises five chapters or essays appertaining to questions relating to "the statics" of pregnancy—as, the position of the uterus; the natural position of the fœtus in utero in advanced pregnancy; position of pregnant females; mode of presentation of dead children in labour.

The *second* part contains also five chapters, in which the female pelvis is studied in an obstetrical point of view. The *third* part is divided into nine chapters. In these are discussed questions relating to the physiology and pathology of pregnancy and the puerperal state, as menstruation in the early period of pregnancy; superfœtation, site of insertion of ovum; internal surface of uterus after delivery; the lochia; length of cervix uteri in advanced pregnancy, etc. etc. The several subjects of which this portion of the volume treats are of no inconsiderable interest; they are all discussed by the author in a manner calculated to convey to the reader clear and we think correct views in respect to them.

The succeeding, or *fourth* part of the work contains eight chapters on questions relating to natural and morbid parturitions, as the dynamics of labour; the power exerted in ordinary and difficult labour; the power of the uterus to resist a bursting pressure; obliquity or lateral flexion; production of inverted uterus; cases of injury to bones and joints in parturition.

The *fifth* part is divided into three chapters devoted to subjects of a miscellaneous character, namely, the retentive power of the abdomen; certain points in "uterine metrology;" cases of vagina duplex, and simple uterus, and of sacculated uterus.

The subjects embraced in the researches of Dr. D. are illustrated by some forty wood-cuts.

The entire volume is full of instruction; and the practitioner will be amply compensated for the time spent in its careful study. D. F. C.

ART. XXVI.—*Stone in the Bladder; with Special Reference to its Prevention, early Symptoms, and Treatment by Lithotrity.* By WALTER J. COULSON, F.R.C.S., etc. 8vo. pp. xviii., 124. London: John Churchill & Sons, 1868.

WE are not informed as to the relationship of the author of this volume to Mr. William Coulson, well known as the writer of a treatise on the diseases of the bladder and prostate gland. That work has maintained its high reputation for many years in its successive editions, and from that fact and from the writer's name, we were prepared to form a high estimate of Mr. Walter J. Coulson's essay now before us. We must confess that we have been disappointed. The volume in question contains a good deal that is of interest, and a good deal that is important, but its information is neither so novel, nor so definite and precise, as we had hoped to find it.

The first portion of Mr. Coulson's book consists of three lectures delivered at St. Peter's Hospital for Stone, etc., during the summer of 1867. The latter part treats of the chemical constitution of the different varieties of urinary calculus, and gives some directions as to the prophylactic measures which may be adopted to prevent calculous formation.

The first lecture considers the early symptoms of stone, and the best method of detecting calculus.

The fact is dwelt upon that as a rule the early symptoms of stone are more acute among children than among adults, and hence in the latter class, the presence of a vesical calculus is often not detected until it has attained considerable size. For the early diagnosis of stone, the influence of exercise is the best indication. Hæmaturia is a not unfrequent symptom of stone, and if it depends upon the presence of a calculus will be most marked after taking exercise. And so with the other symptoms that depend upon the action of the stone as a foreign body in the bladder.

The existence of stone being rendered probable by a consideration of the various circumstances of the patient's case, it becomes the duty of the surgeon to explore the bladder by mechanical means. For children, Mr. Coulson thinks